Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)
	)
CRITICAL CARE TELEMETRY GROUP	)
	)
Petition to Amend Part 15 of the Commission's Rules to Permit Operation of Biomedical Telemetry Devices at Power Levels Not In Excess of 5 Milliwatts on Vacant VHF and UHF Television Channels	)

PRM94ET

To: The Secretary

SUPPLEMENT TO PETITION FOR RULE MAKING

The Critical Care Telemetry Group ("CCTG"), consisting of Hewlett-Packard Company Medical Products Group, Marquette Electronics, Inc., Pacific Communications, Siemens Medical Systems, Inc., and SpaceLabs Medical, Inc., hereby supplements the Petition for Rule Making (the "Petition") CCTG submitted to the Commission on December 23, 1994.

In its Petition, CCTG requested that the Commission issue, on an expedited basis, a Notice of Proposed Rule Making to permit the operation of low-power, medical telemetry devices, on a Part 15 basis, on vacant VHF television channels in the 174-216 MHz band (channels 7-13) and on all vacant UHF television channels at power levels not in excess of five (5) milliwatts.

After an initial review of the Petition, the Commission's staff requested that CCTG provide information concerning the impact on CCTG's proposal of the Commission's advanced television ("ATV") plan, which could involve

each TV licensee having two channels on which to transmit during the transition from analog TV to digital TV.[1]

Specifically, the staff asked whether, during such a transition, there would be a sufficient number of vacant TV channels to be used for medical telemetry, as proposed by CCTG. To assist in the analysis, the staff provided CCTG with a hypothetical ATV transition table of TV channel assignments.

The attached engineering study demonstrates that, even in the transition table of television channel assignments, with each TV licensee transmitting on two channels, there are a sufficient number of vacant channels to satisfy the requirements of medical telemetry service providers.[2]

Except for the San Francisco television market, in each of the top 20 television markets in the United States there would be at least two vacant TV channels between channel 20 and channel 50 that meet the minimum co-channel mileage separation requirements that CCTG proposed in its Petition.[3] Outside of the top 20 markets, there are, of course, many more vacant channels that can be used for the operation of medical telemetry devices.

The engineering study submitted with the Petition and the further engineering study attached to this supplemental submission demonstrate that, by authorizing the operation of medical telemetry devices at power levels not in excess of 5 millimeters on vacant upper VHF channels and on all UHF television channels, the Commission can accommodate the immediate requirements of medical telemetry devices without risking harmful interference to existing or planned television services.

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[1] *See, e.g., Memorandum Opinion and Order/Third Report and Order/Third Further Notice of Proposed Rule Making*, 7 FCC Rcd 6924, 6926 (1992).

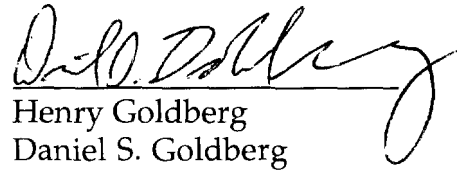
[2] It is important to emphasize that the attached engineering study is based solely on the minimum mileage separation criteria proposed in the Petition, and does not take into account the inherent interference mitigation factors present in the medical telemetry service (*e.g.*, the operation of medical telemetry devices within hospital buildings provides a substantial shielding effect). Accordingly, the attached study tends to overstate the potential for interference.

[3] The minimum co-channel mileage separation requirements proposed in CCTG's Petition are as follows: 107.1 km in the High-Band VHF (Zone I), 131.8 km in the High-Band VHF (Zone II and III), and 113.2 km in the UHF bands.

In light of the essential, life-saving functions that these devices perform, adoption of the amendments to the Commission's Rules proposed in the Petition would substantially advance the public interest. Accordingly, CCTG urges the Commission to issue the Notice of Proposed Rule Making requested by CCTG on an expedited basis.

Respectfully submitted,

CRITICAL CARE TELEMETRY GROUP

By: 
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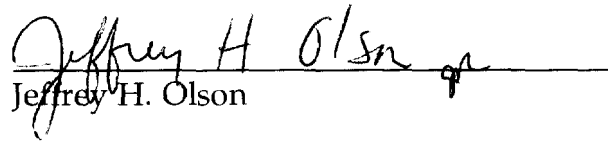
By: 
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May 2, 1995

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ENGINEERING STATEMENT

I, Robert A. Bednarek hereby certify that I am a telecommunications consultant and a principal in the firm of Rubin, Bednarek & Associates with offices at 1350 Connecticut Avenue, N.W., Suite 610, Washington, D.C. I hold a Bachelor of Science degree in Electrical Engineering from the University of Florida and am a certified Engineer-in-Training; my registration as a Professional Engineer is pending in the State of Florida. I have provided consulting services in the area of telecommunications since 1978. My qualifications in that regard are a matter or record with the Federal Communication Commission.

The firm of Rubin, Bednarek & Associates was originally retained by the Critical Care Telemetry Group ("CCTG") consisting of Hewlett-Packard Company Medical Products Group, Marquette Electronics, Inc., Pacific Communications, Siemens Medical Systems, Inc., and SpaceLabs Medical, Inc., to provide technical assistance in the preparation of a Petition for Rule Making ("Petition") originally submitted to the Commission on December 23, 1994 regarding the modification of Part 15 governing the operation of biomedical telemetry devices.

In conjunction with this support, CCTG was requested by FCC staff to evaluate the impact of the Commission's proposed advanced television transmission plan on the availability of the "vacant" channels proposed for use by biomedical telemetry devices. To this end, the Commission provided CCTG with a sample ATV transition plan wherein each existing television licensee was allocated two standard 6 MHz channels from either the VHF or UHF band, consistent with the inter-channel spacing requirements developed as part of the ATV proceeding. Using this hypothetical allocation scheme, an investigation of the continued availability of biomedical telemetry channels was undertaken.

In support of the original Petition, minimum mileage separation criteria between biomedical telemetry transmitters and operating co-channel television stations were

developed to ensure the lack of harmful interference. The table below summarizes these criteria:

Band	Zone	Separation
VHF Hi-Band	I	107.1 Km
VHF Hi-Band	II & III	131.8 Km
UHF		113.2 Km

In order to investigate the impact of the proposed ATV allocations, a study of the top 20 television markets was conducted to determine if sufficient geographical separation, consistent with the table above, could be maintained on more than two channels. To this end, the reference point coordinates of the market under study were compared to the closest reference coordinates of each allocated channel under the ATV plan.

The results of these studies are presented in the attached Figures/Exhibits 1 through 20 which show, on a channel-by-channel basis for the range of channels 20 through 30, the geographical separation between the reference coordinates and the nearest operating or allocated ATV channel. With the exception of San Francisco, there are at least two or more UHF television channels within this band on which operation of a biomedical device at or near the reference point of the market would be possible while maintaining the recommended CCTG mile separation criteria. While not investigated, other UHF channels outside this range or VHF channels may also be available in these markets. It is important to note that the analysis herein is based strictly on mile separation criteria and does not incorporate any interference mitigation factors discussed in the original Petition.

Signed: Robert A. Bednarek
Robert A. Bednarek

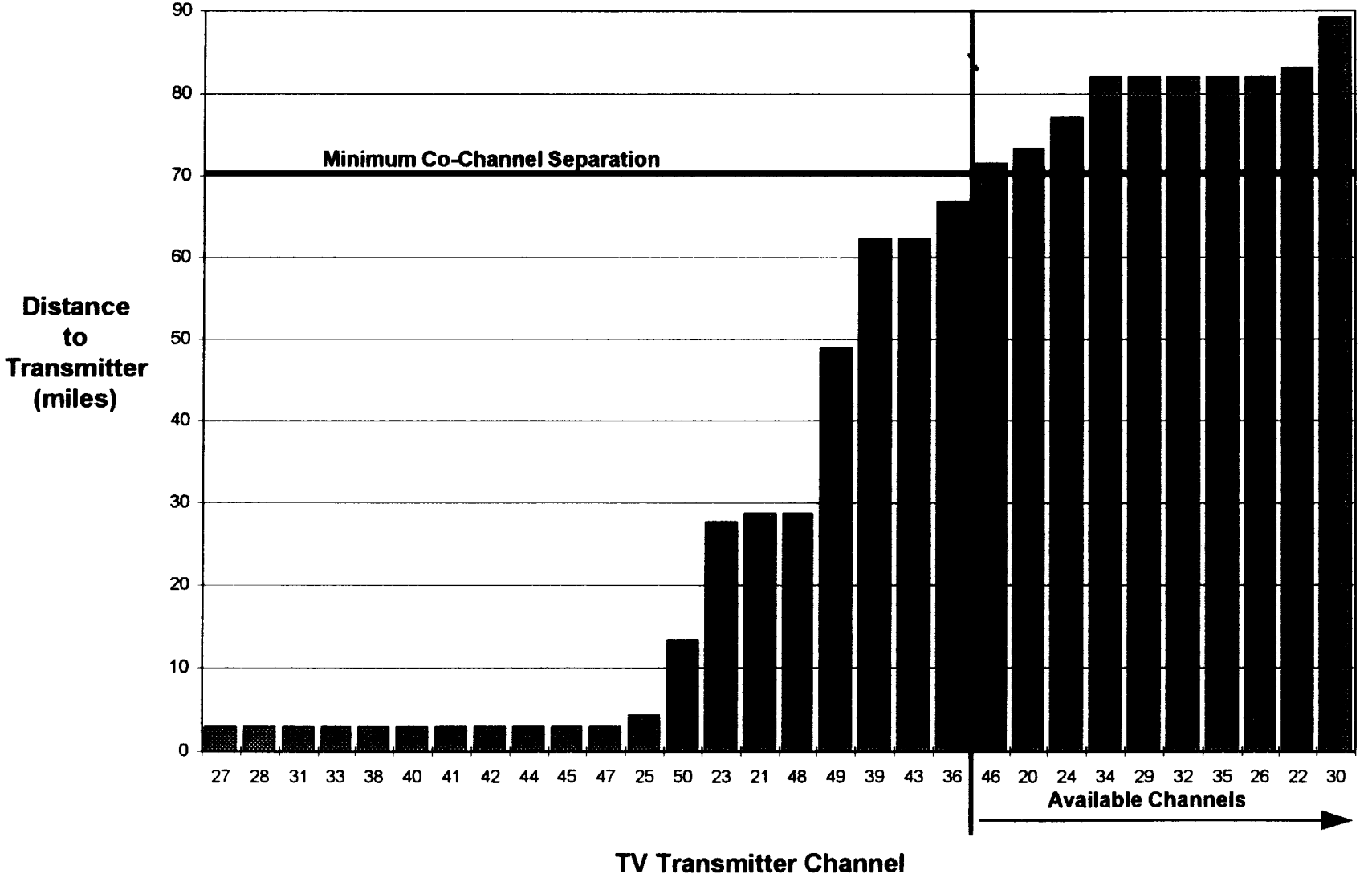
§76.51 Major television markets. - For purposes of the cable television rules, the following is a list of the major television markets and their designated communities:

(a) First fifty major television markets:

Television Markets Communities	Reference Point Coordinates (§76.53)					
(1) **New York**, N.Y.-Linden-Paterson-Newark, N.J.	40	45	06	73	59	39
(2) **Los Angeles**-San Bernardino-Corona-Fontana-Riverside, Ca.	34	03	15	118	14	28
(3) Chicago, Ill.	41	52	28	87	38	22
(4) **Philadelphia**, Pa.-Burlington, N.J.	39	56	58	75	09	21
(5) Detroit, Mich.	42	19	48	83	02	57
(6) **Boston**-Cambridge-Worcester-Lawrence, Mass.	42	21	24	71	03	25
(7) **San Francisco**-Oakland-San Jose, Ca.	37	46	39	122	24	40
(8) **Cleveland**-Lorain-Akron, Ohio	41	29	51	81	41	50
(9) Washington, D.C.	38	53	51	77	00	33
(10) Pittsburgh, Pa.	40	26	19	80	00	00
(11) St. Louis, Mo.	38	37	45	90	12	22
(12) **Dallas**-Fort Worth, Tex.	32	47	09	96	47	37
(13) **Minneapolis**-St. Paul, Minn.	44	58	57	93	15	43
(14) Baltimore, Md.	39	17	26	76	36	45
(15) Houston, Tex.	29	45	26	95	21	37
(16) **Indianapolis**-Bloomington, Ind.	39	46	07	86	09	46
(17) **Cincinnati**, Ohio-Newport, Ky.	39	06	07	84	30	35
(18) Atlanta-Rome, Ga.	33	45	10	84	23	37
(19) **Hartford**-New Haven-New Britain-Waterbury-New London, Conn.	41	46	12	72	40	49
(20) **Seattle**-Tacoma, Wash.	47	36	32	122	20	12

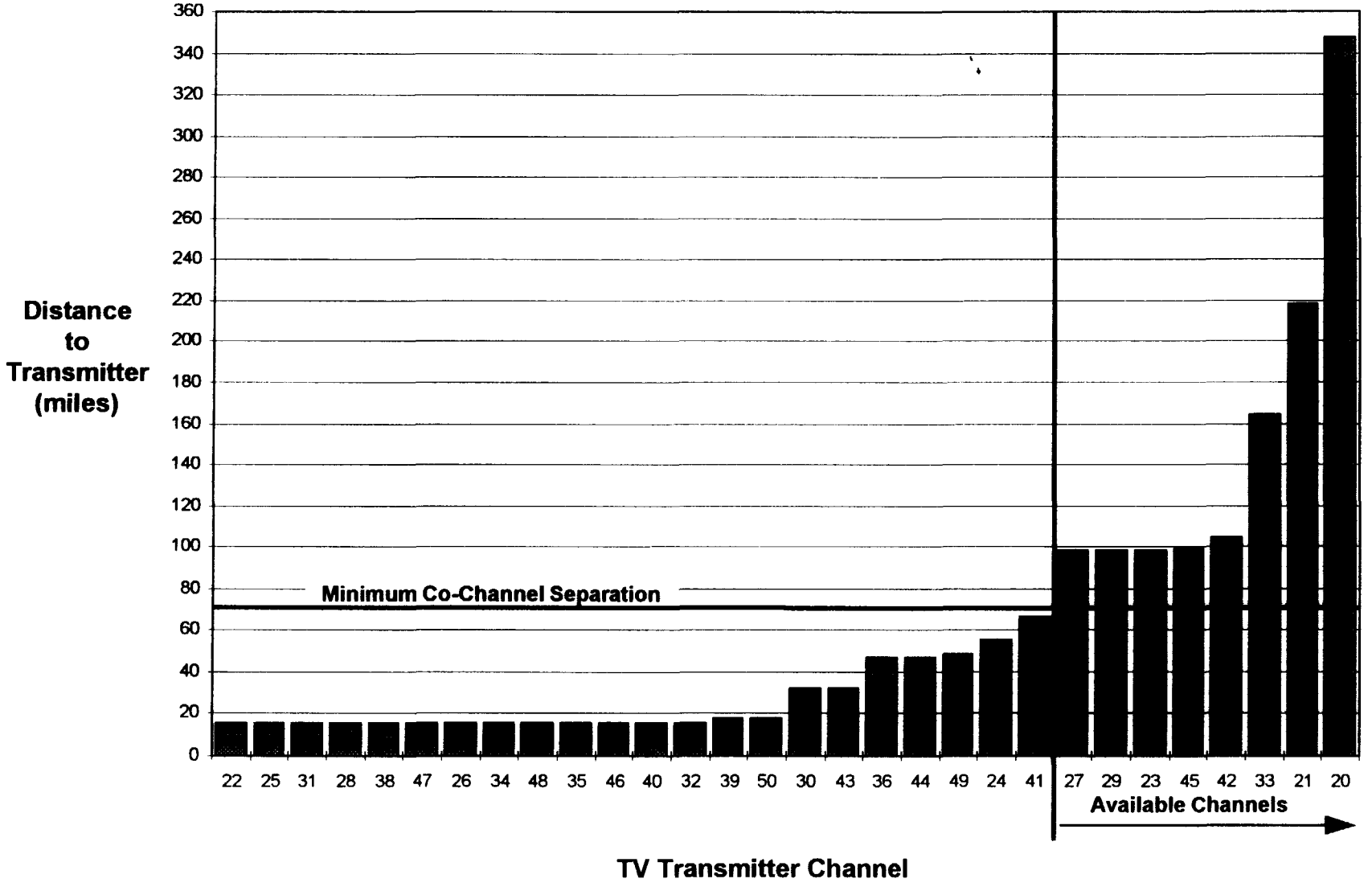
Distance to Nearest Channel 20-50 TV Transmitters from New York Market Reference Site

Reference Site Coordinates: N 40° 45' 06" W 73° 59' 39"



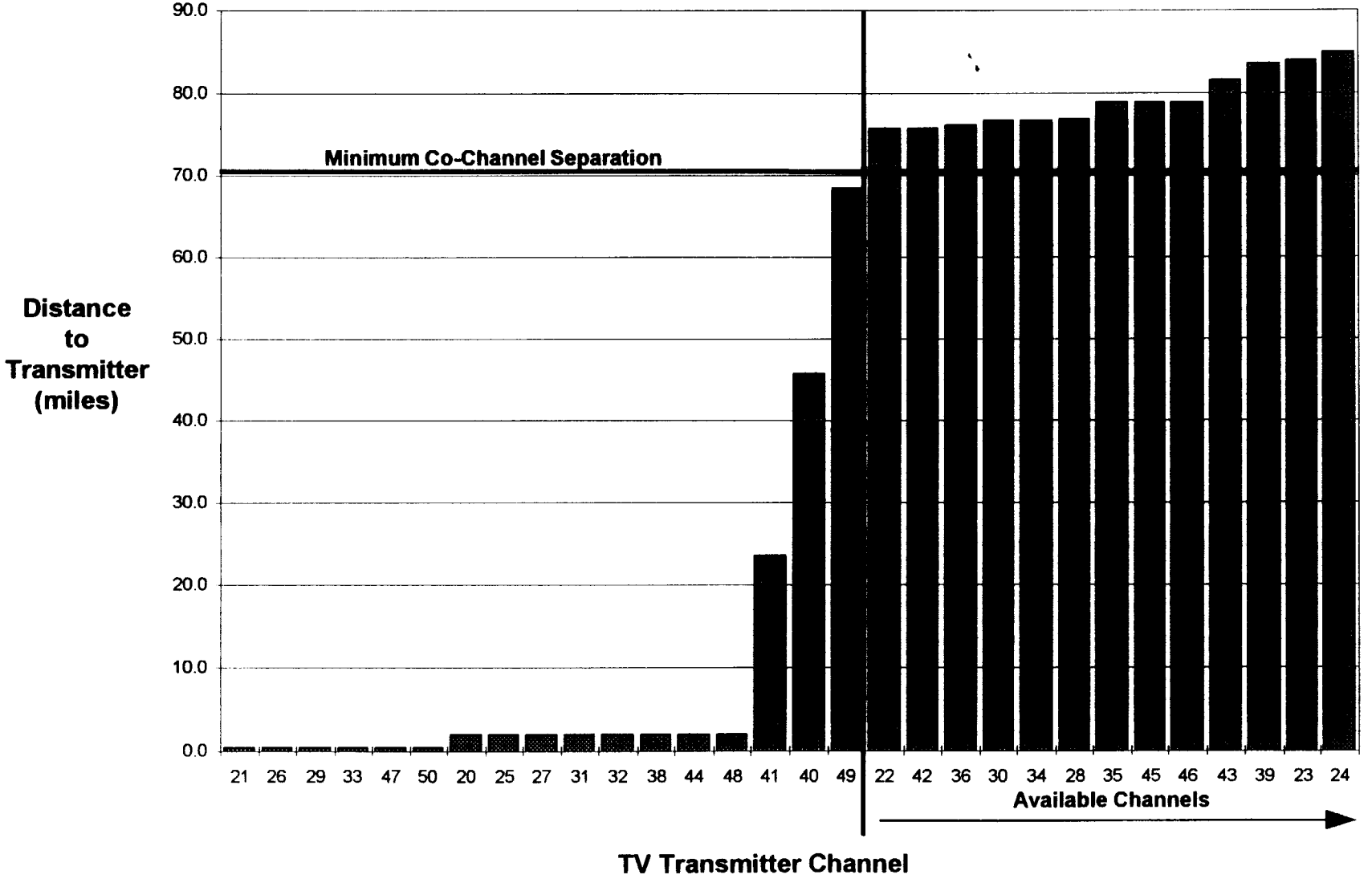
Distance to Nearest Channel 20-50 TV Transmitters from Los Angeles, CA Market Reference Site

Reference Site Coordinates: N 34° 03' 15" W 118° 14' 28"



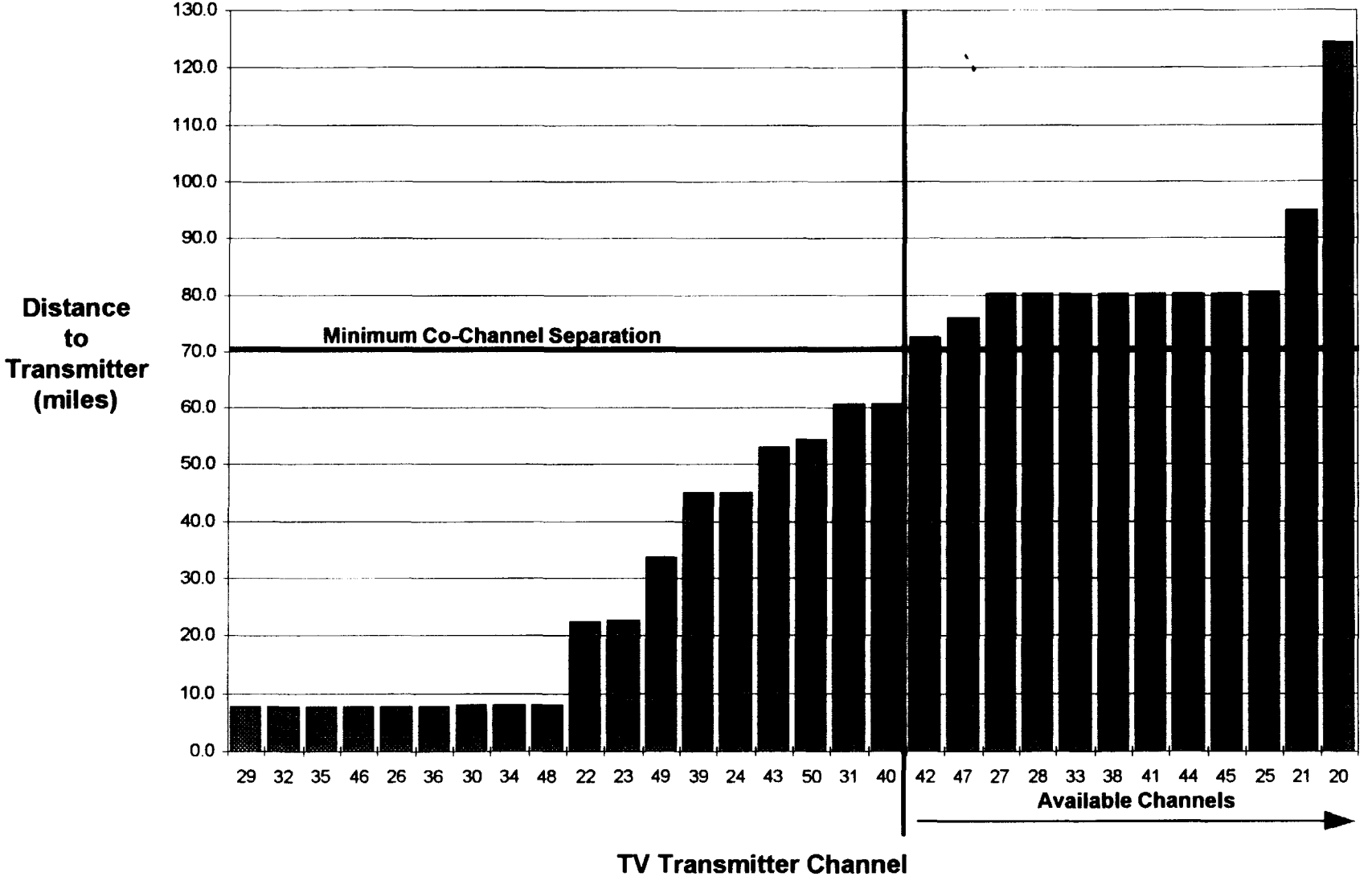
Distance to Nearest Channel 20-50 TV Transmitters from Chicago, IL Market Reference Site

Reference Site Coordinates: N 41° 52' 28" W 87° 38' 22"



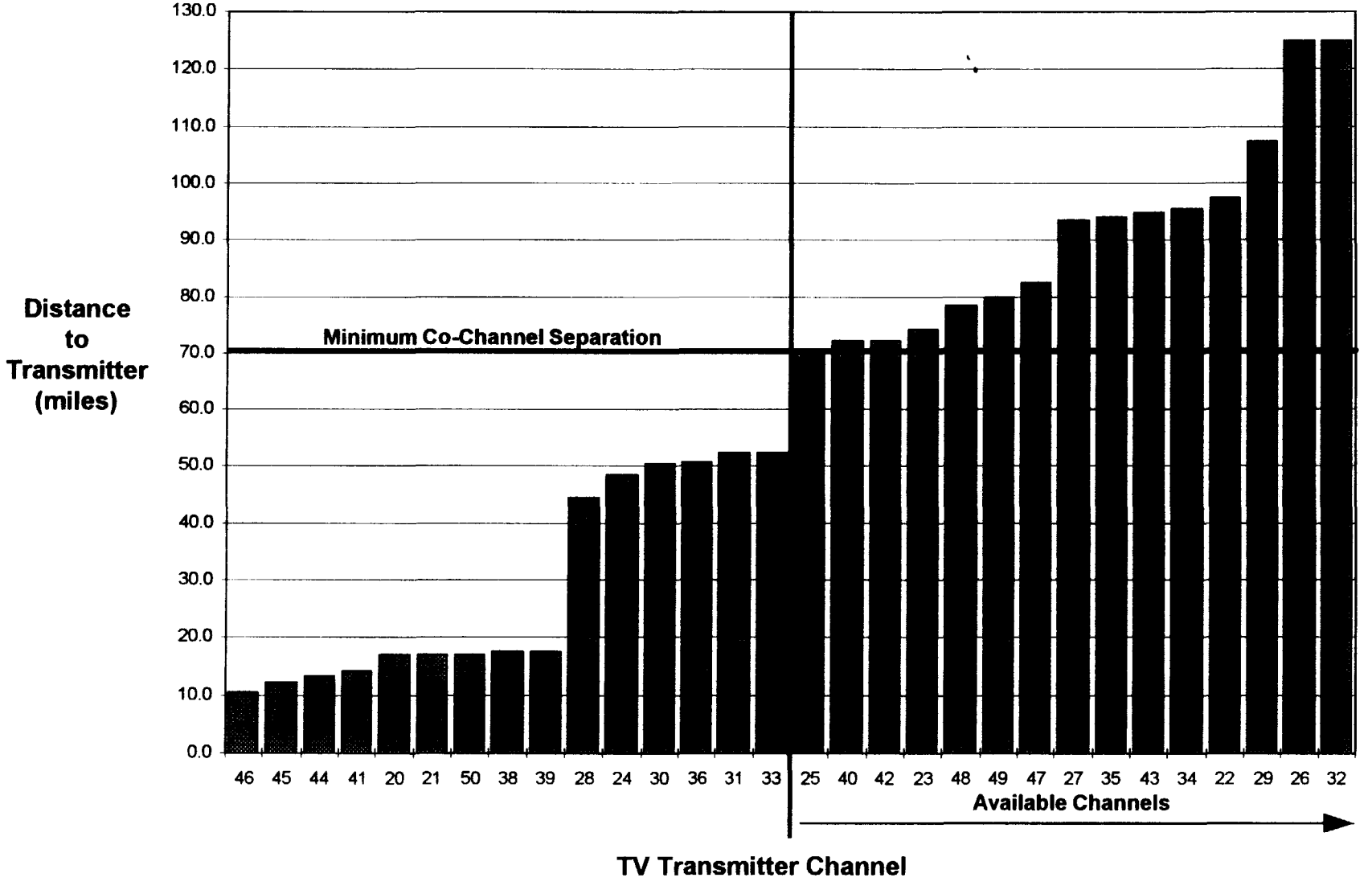
Distance to Nearest Channel 20-50 TV Transmitters from Philadelphia, PA Market Reference Site

Reference Site Coordinates: N 39° 56' 58" W 75° 09' 21"



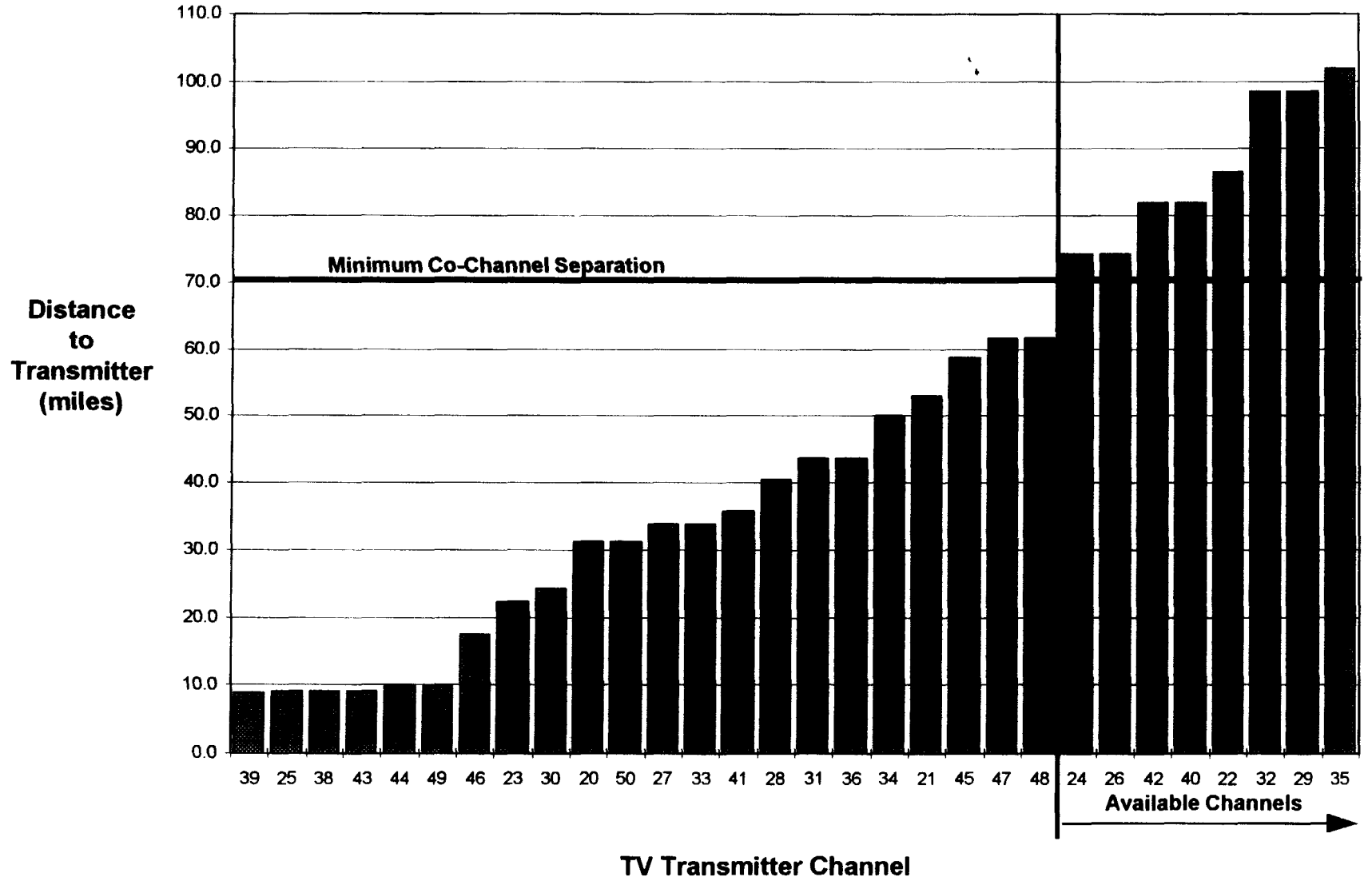
Distance to Nearest Channel 20-50 TV Transmitters from Detroit, MI Market Reference Site

Reference Site Coordinates: N 42° 19' 48" W 83° 02' 57"



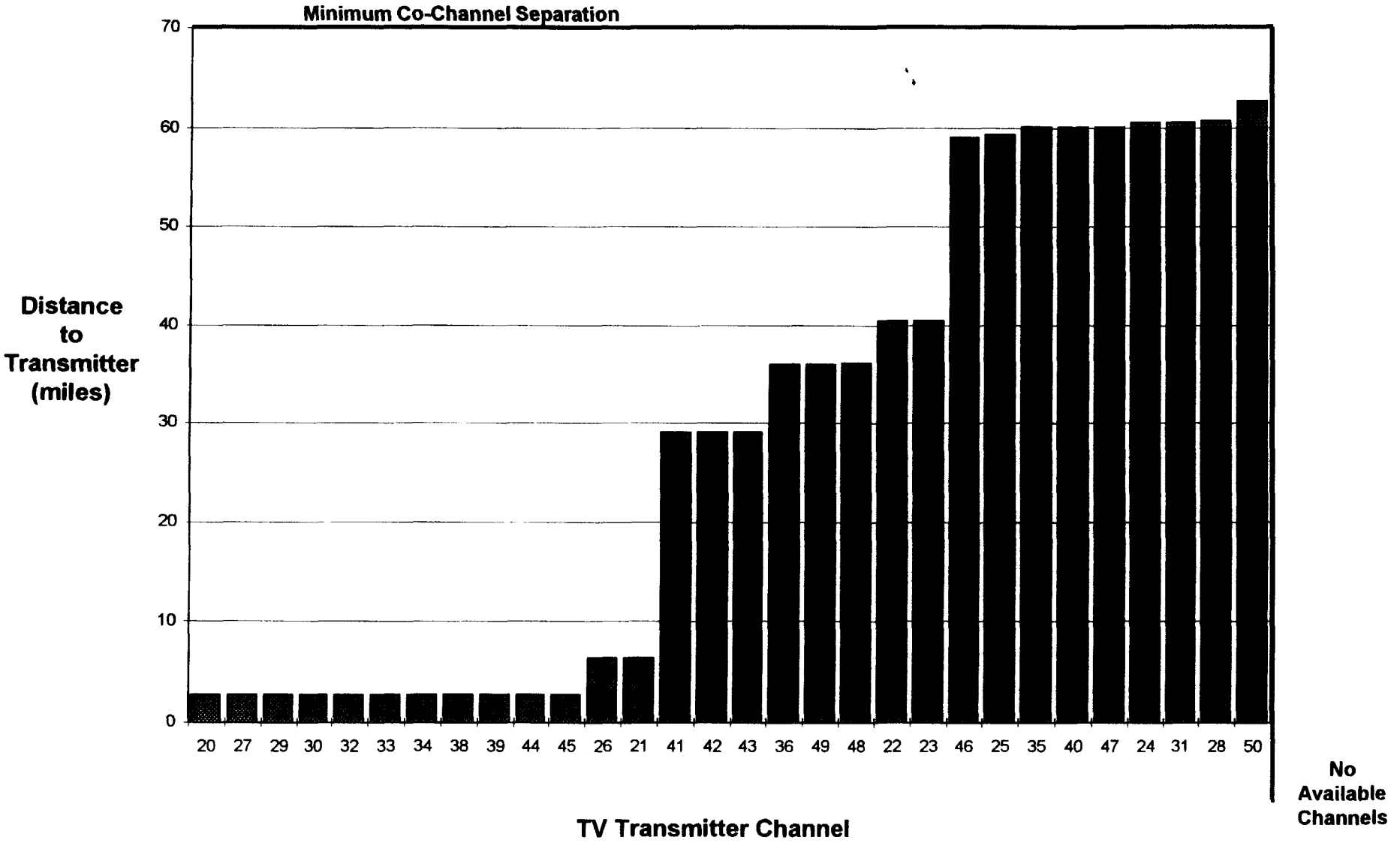
Distance to Nearest Channel 20-50 TV Transmitters from Boston, MA Market Reference Site

Reference Site Coordinates: N 42° 21' 24" W 71° 03' 25"



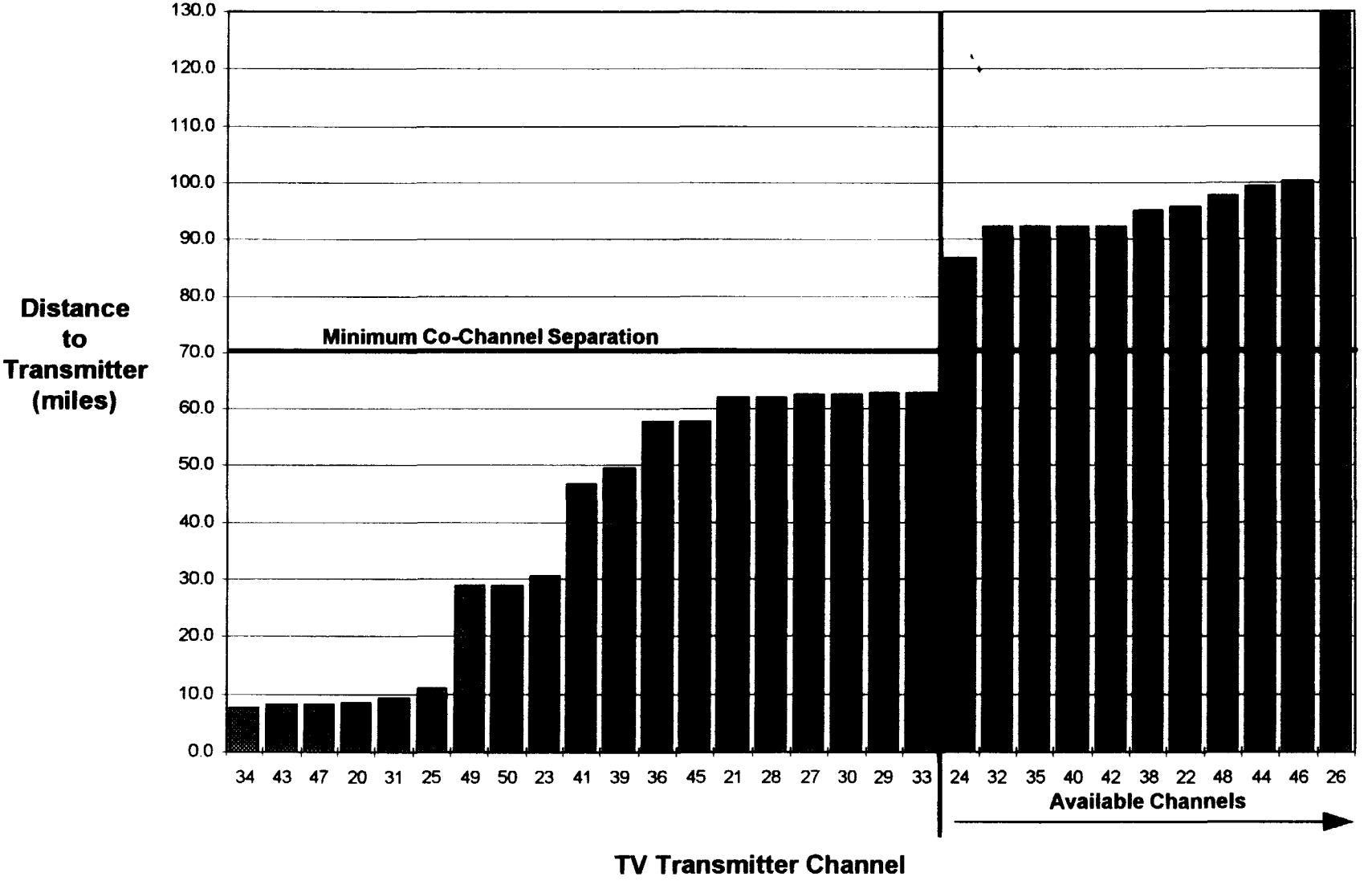
Distance to Nearest Channel 20-50 TV Transmitters from SanFrancisco, CA Market Reference Site

Reference Site Coordinates: N 37° 46' 39" W 122° 24' 40"



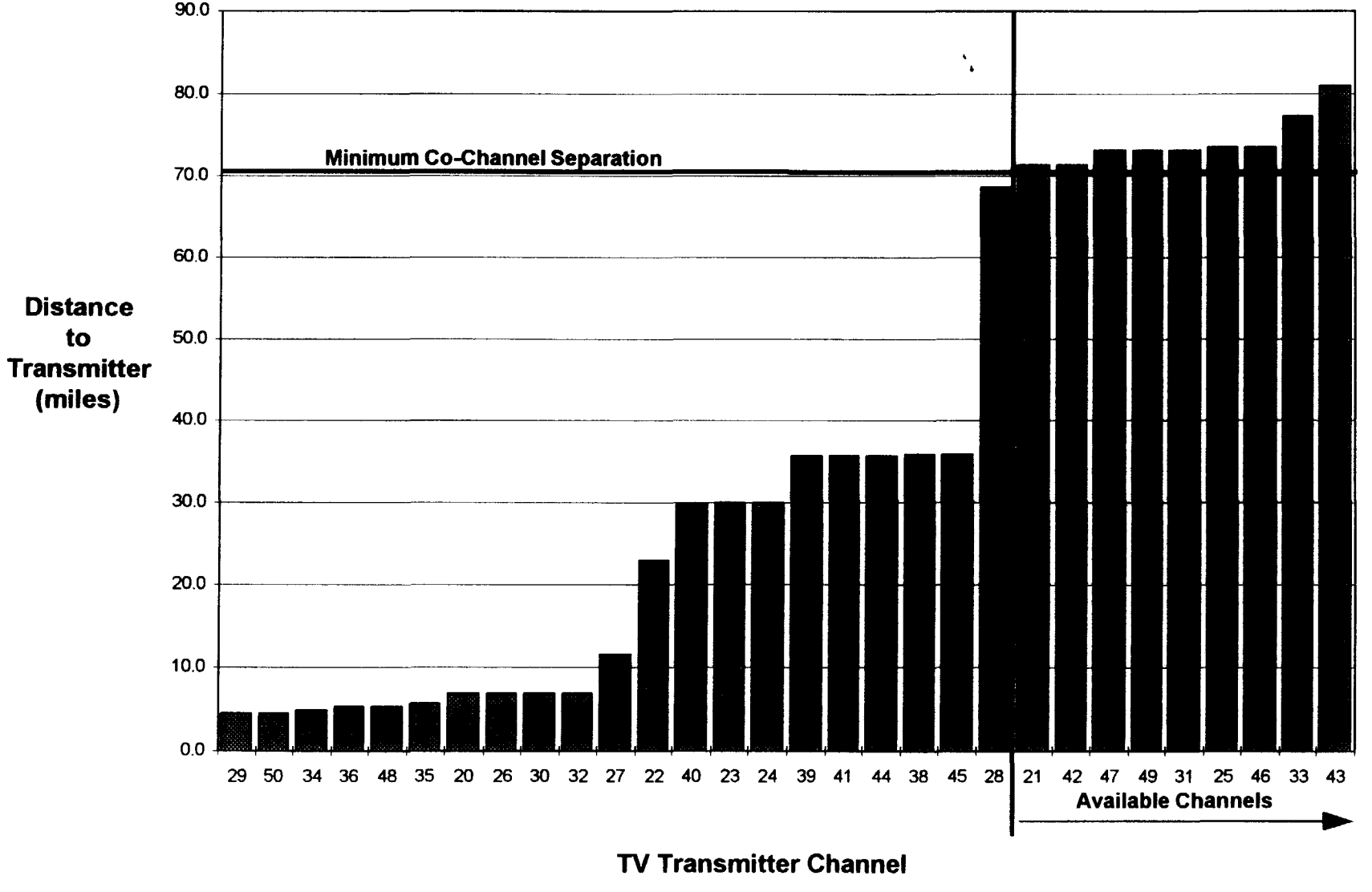
Distance to Nearest Channel 20-50 TV Transmitters from Cleveland, OH Market Reference Site

Reference Site Coordinates: N 41° 29' 51" W 81° 41' 50"



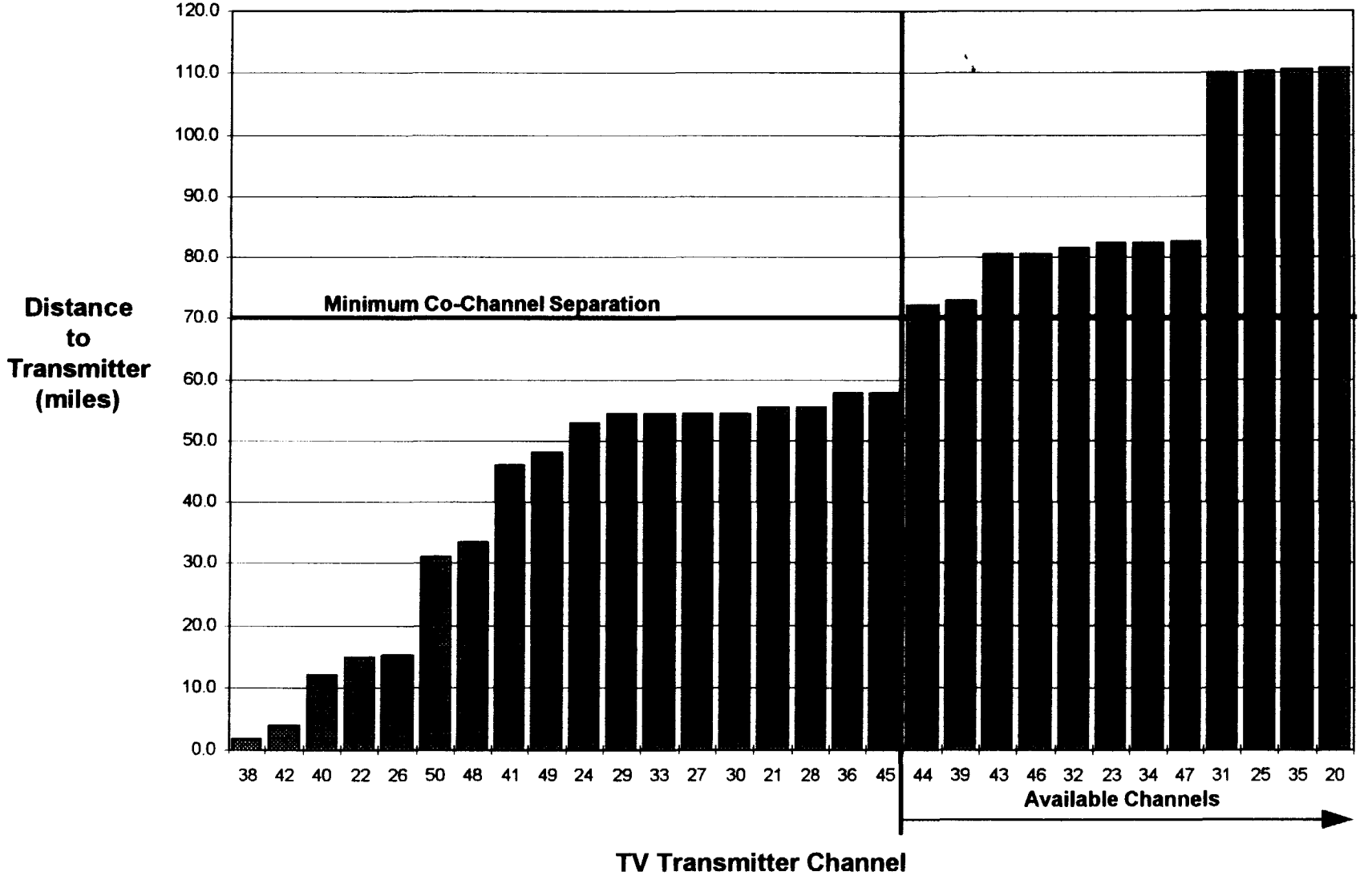
Distance to Nearest Channel 20-50 TV Transmitters from Washington, DC Market Reference Site

Reference Site Coordinates: N 38° 53' 51" W 77° 00' 33"



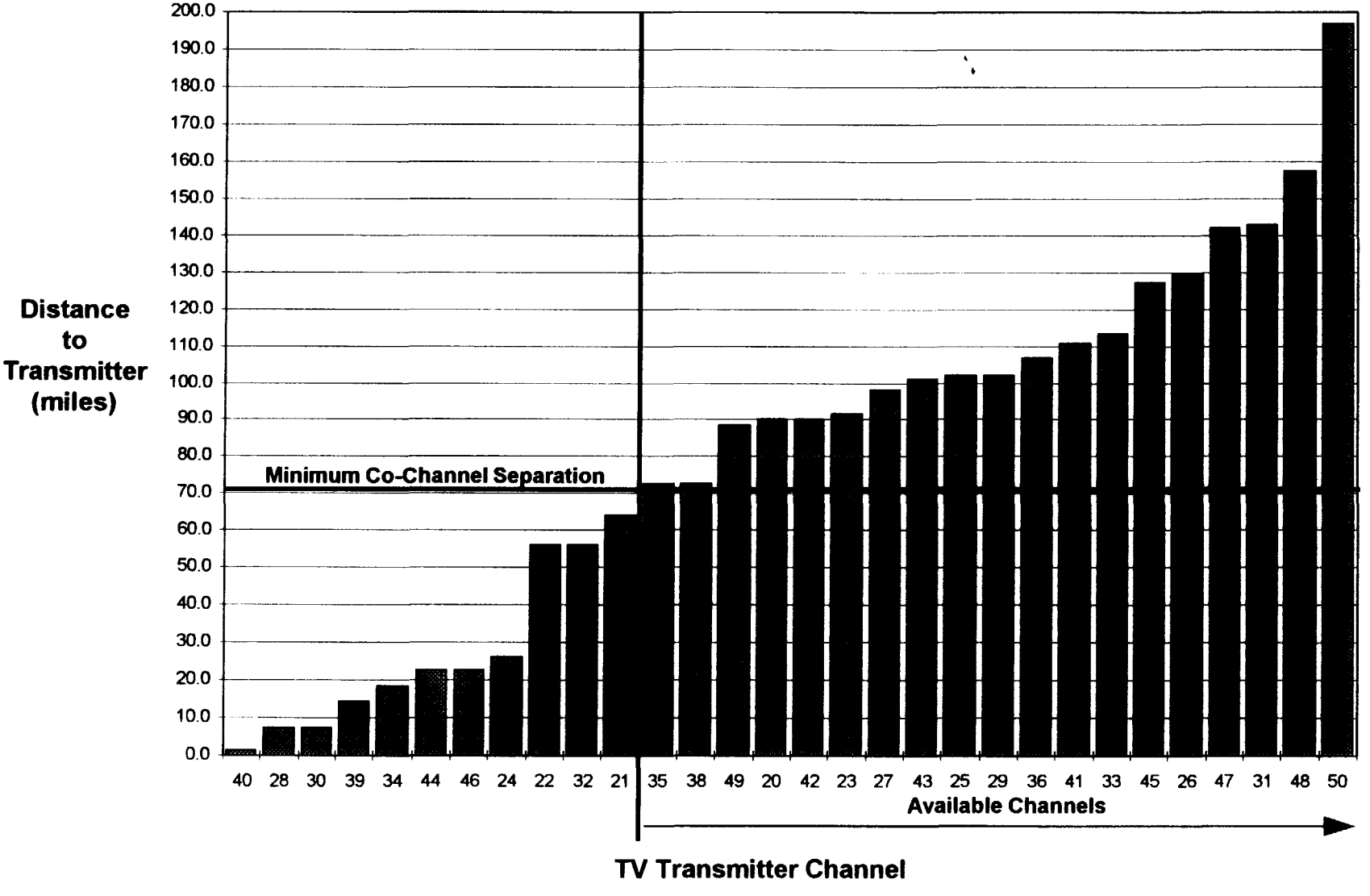
Distance to Nearest Channel 20-50 TV Transmitters from Pittsburgh, PA Market Reference Site

Reference Site Coordinates: N 40° 26' 19" W 80° 00' 00"



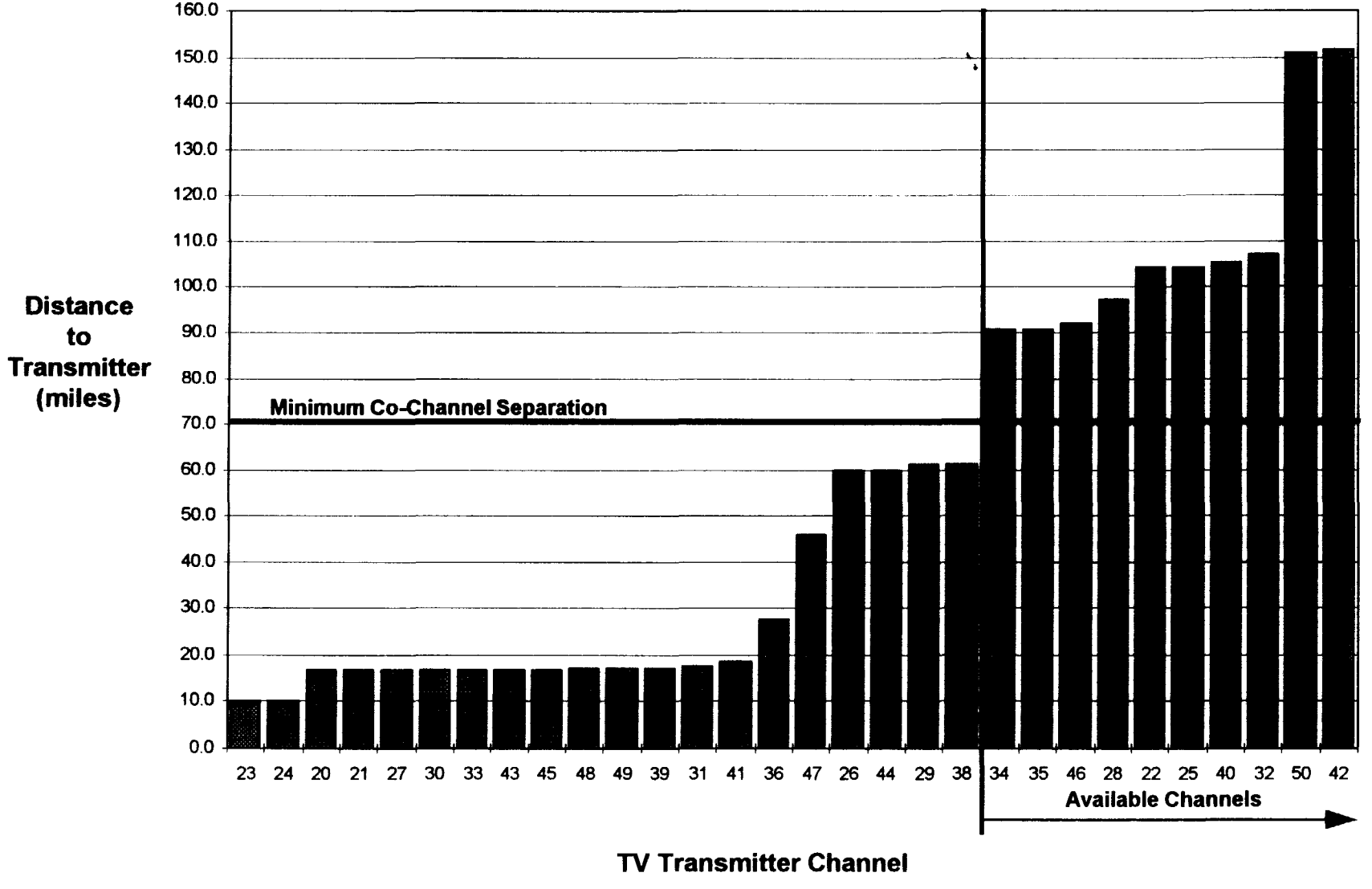
Distance to Nearest Channel 20-50 TV Transmitters from St. Louis, MO Market Reference Site

Reference Site Coordinates: N 38° 37' 45" W 90° 12' 22"



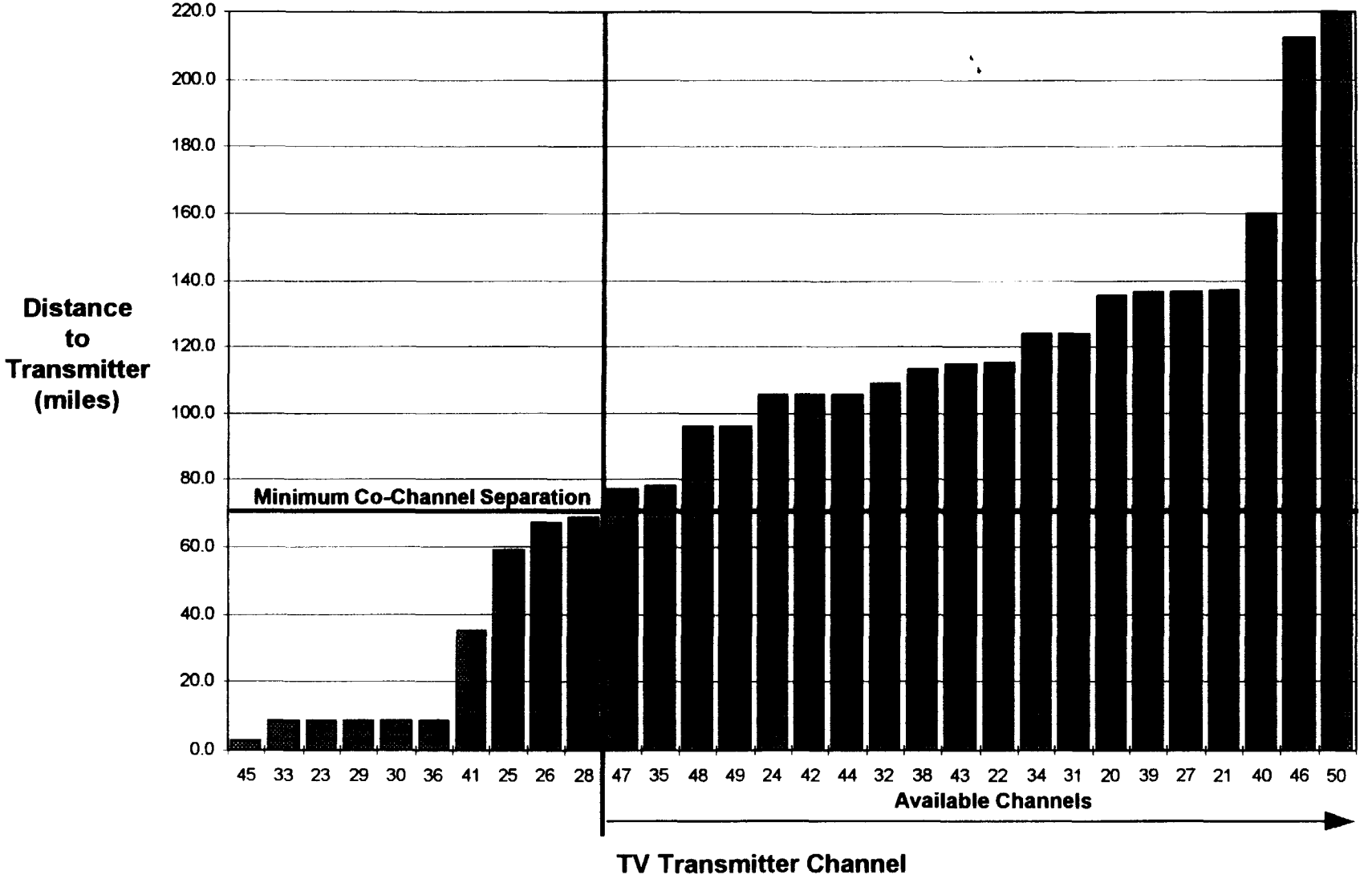
Distance to Nearest Channel 20-50 TV Transmitters from Dallas, TX Market Reference Site

Reference Site Coordinates: N 32° 47' 09" W 96° 47' 37"



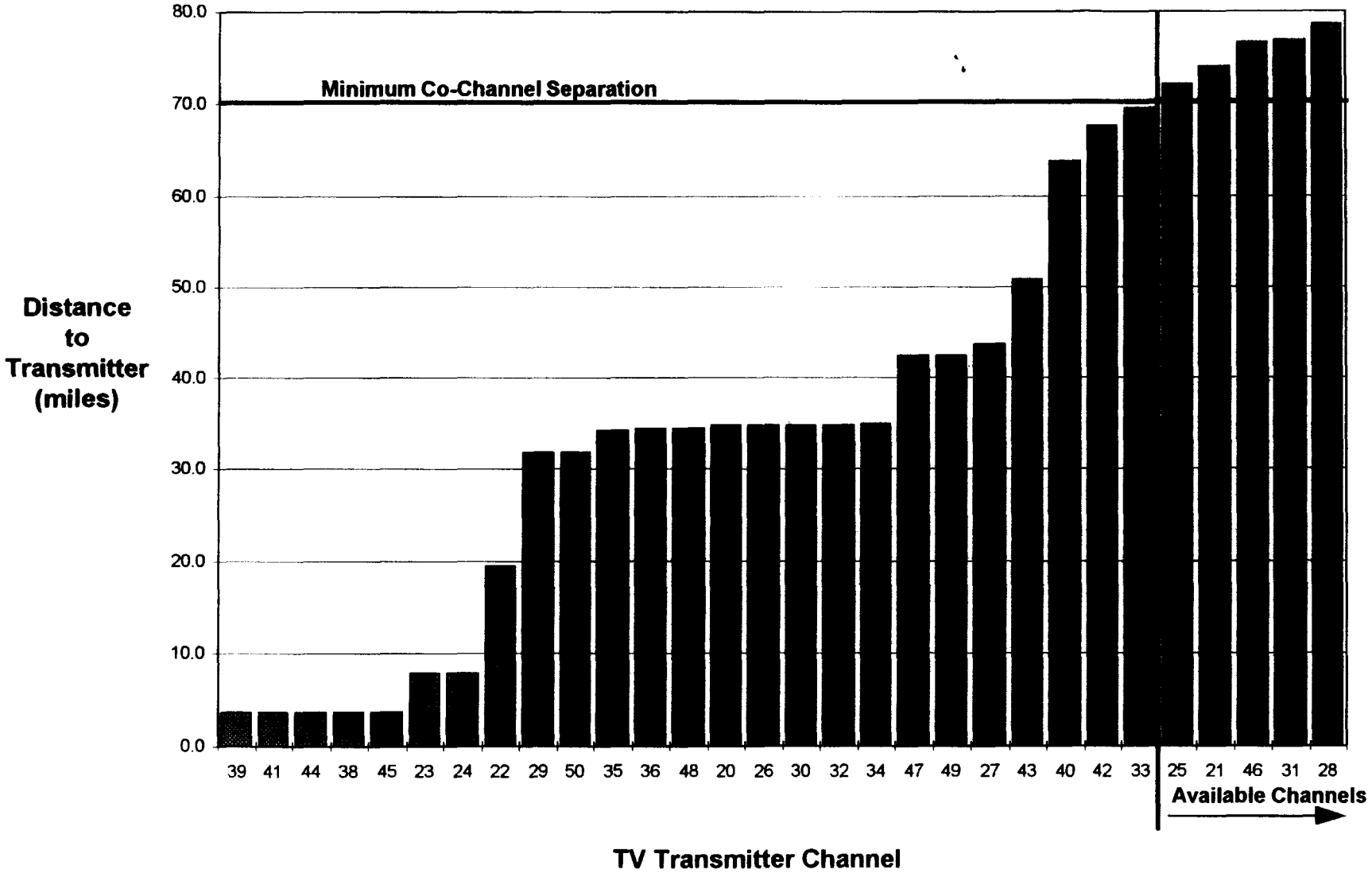
Distance to Nearest Channel 20-50 TV Transmitters from Minneapolis, MN Market Reference Site

Reference Site Coordinates: N 44° 58' 57" W 93° 15' 43"



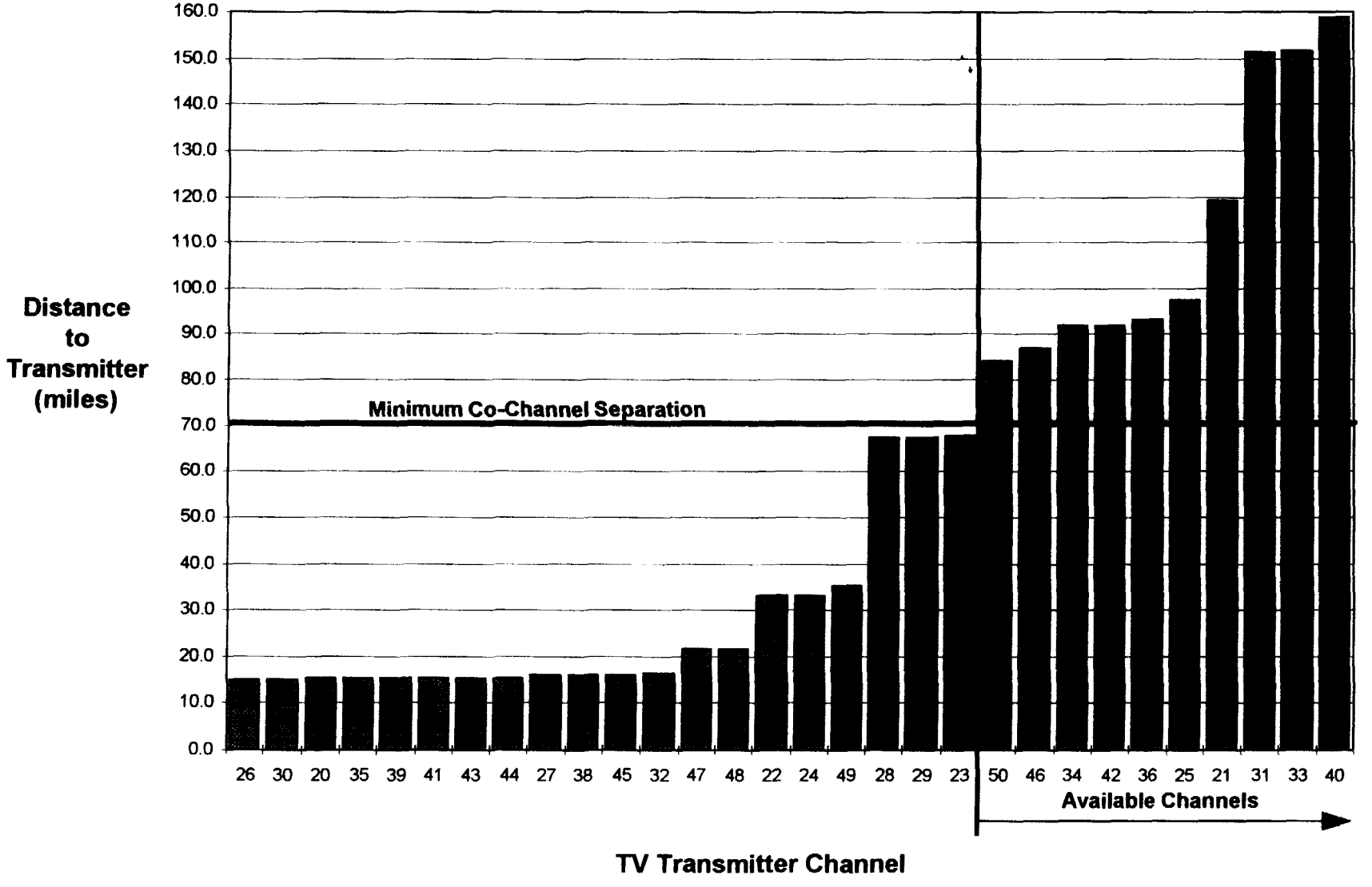
Distance to Nearest Channel 20-50 TV Transmitters from Baltimore, MD Market Reference Site

Reference Site Coordinates: N 39° 17' 26" W 76° 36' 45"



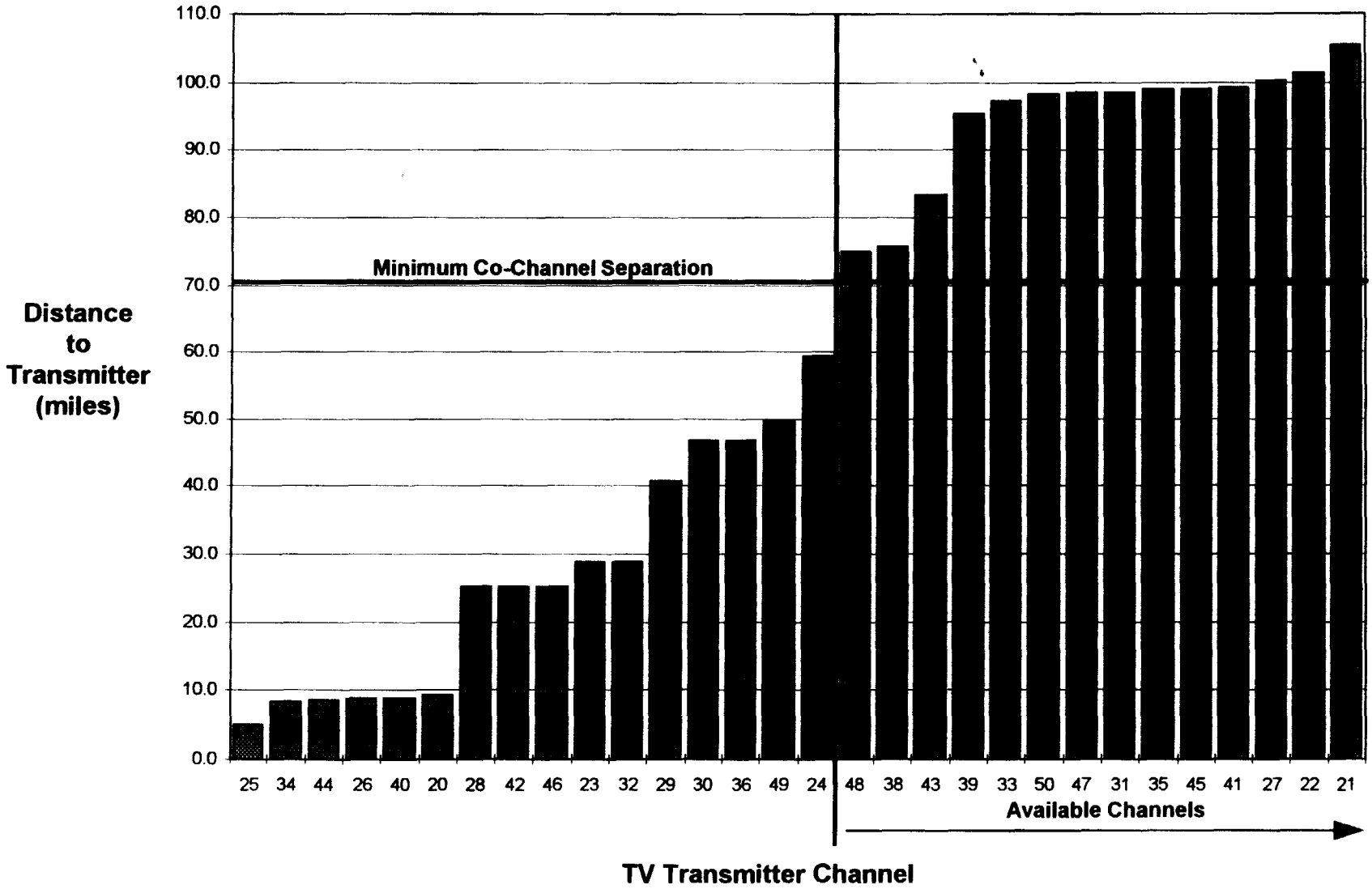
Distance to Nearest Channel 20-50 TV Transmitters from Houston, TX Market Reference Site

Reference Site Coordinates: N 29° 45' 26" W 95° 21' 37"



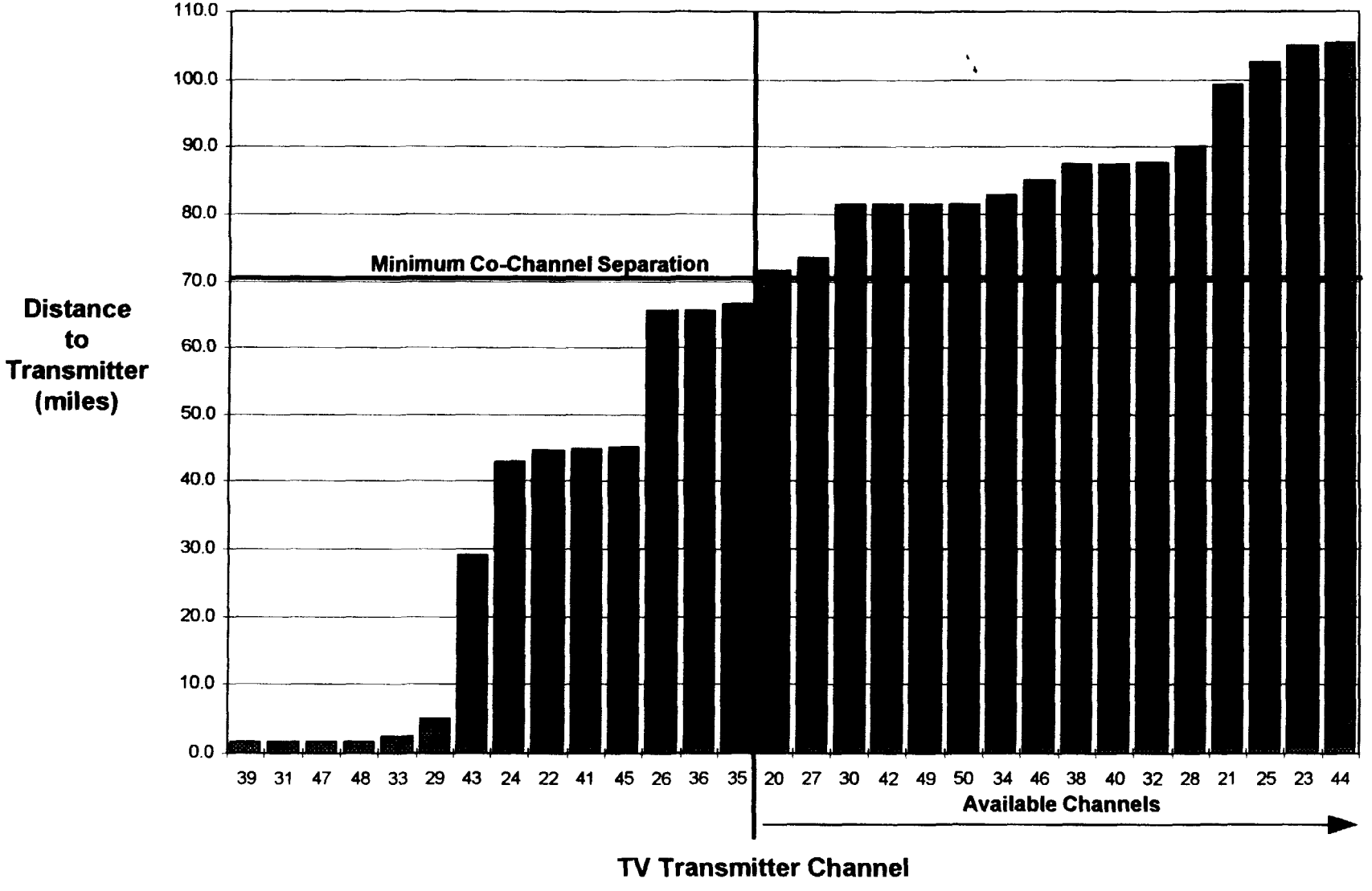
Distance to Nearest Channel 20-50 TV Transmitters from Indianapolis, IN Market Reference Site

Reference Site Coordinates: N 39° 46' 07" W 86° 09' 46"



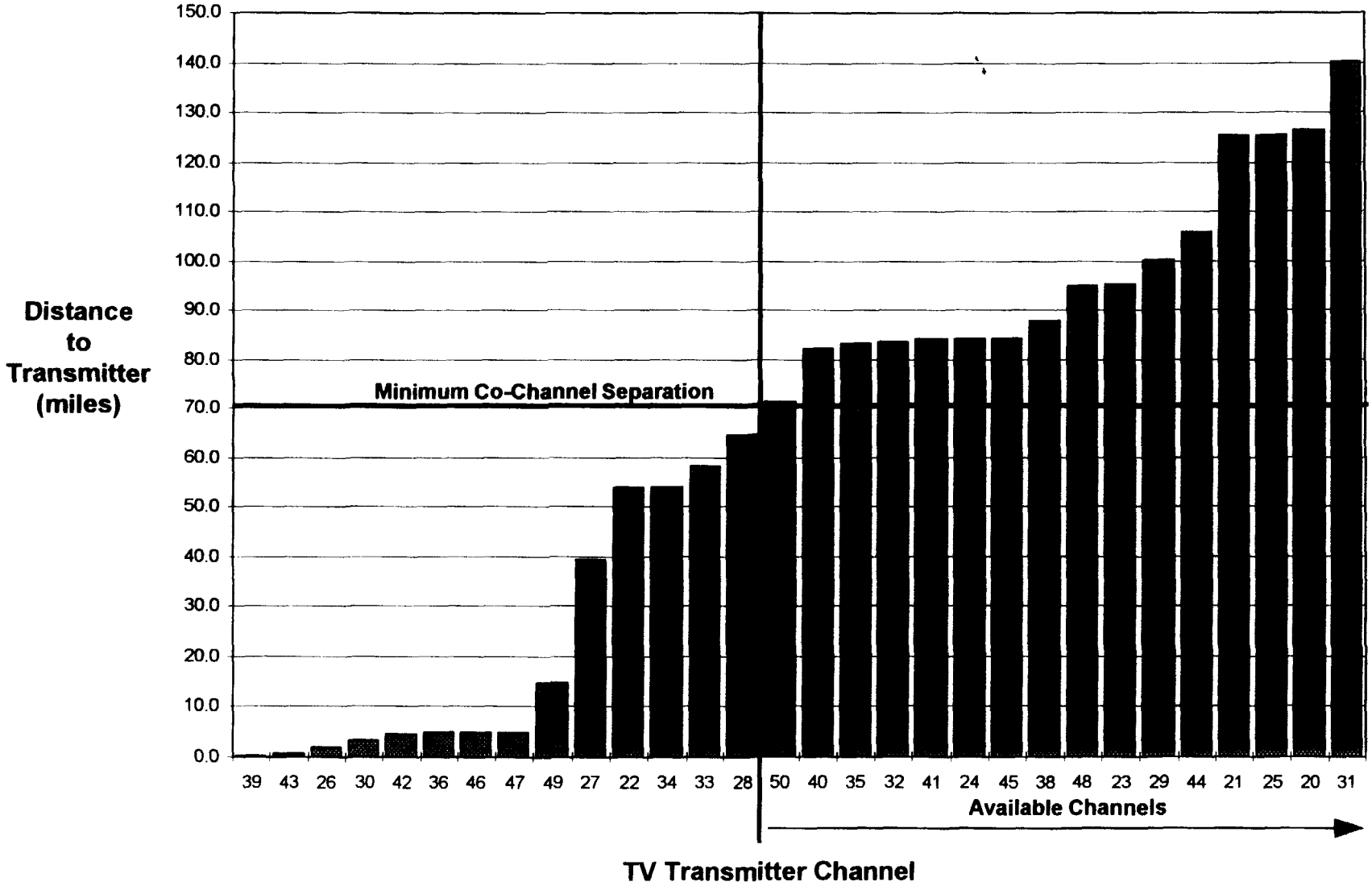
Distance to Nearest Channel 20-50 TV Transmitters from Cincinnati, OH Market Reference Site

Reference Site Coordinates: N 39° 06' 07" W 84° 30' 35"



Distance to Nearest Channel 20-50 TV Transmitters from Atlanta, GA Market Reference Site

Reference Site Coordinates: N 33° 45' 10" W 84° 23' 37"



Distance to Nearest Channel 20-50 TV Transmitters from Hartford, CT Market Reference Site

Reference Site Coordinates: N 41° 46' 12" W 72° 40' 49"